

## CHAPTER 3

**AUTOMATED INFORMATION SYSTEMS MANAGEMENT****3-1. General**

This chapter addresses the AIS management. It also discusses the communications and information architecture, the Warfighters Information Network (WIN), that will ultimately provide a seamless connectivity from the sustaining base to the foxhole. The emerging network will be the key enabler for Army XXI units and will enable medical units to provide CHS across the continuum of all military operations.

*a.* In the future with final incorporation of the WIN to the total Army, all medical operations throughout the battlefield may be monitored by senior leaders. The dynamics and tempo of future operations will require continuous mission analysis and adjustments to the operation orders (OPORDs)/OPLANs. Army medical units must be highly mobile and must have the ability to react, coordinate, and synchronize CHS across the nonlinear battlefield.

*b.* Wireless local area networks (LANs), satellite, and personnel communications services will allow for greater mobility of medical units. The WIN architecture will replace the noninteroperable stovepipe systems of the past. The WIN architecture will provide for an operations environment that is highly robust, reliable, and readily capable of exchanging information vertically and horizontally across the different levels of security classifications and airwave bandwidths.

**3-2. Automated Information Systems**

*a. General.* Basic information system functions include personnel, machines, and manual or automated systems that allow for the collection, transportation, processing, dissemination, display, and protection of information. These basic functions cover all aspects of an organization's operations and provide commanders with an accurate, relevant, and common picture, and a common situational awareness of the battlefield. Commander will use their staffs as part of the AIS to plan and integrate IO.

*b. Continuum of Combat Health Support/Operations.* Army medical organizations/units use AIS to support seamless CHS throughout the continuum of Army operations.

(1) Medical units will support current operational deployments while simultaneously planning for future CHS contingencies. The requirement for Army forces to conduct force projection and split-based operations using strategic systems make interoperability and flexibility critical characteristics of any AIS fielded by the Army. The CHS IO requirements are expressed in the CHS information architecture (see paragraph 3-3).

(2) The use of computerization (digitization), along with cellular communications and satellite connectivity, allows Army units individual soldiers to connect to any location using the Internet or a satellite connection. The cumulative effects of these changes will affect the shape of organizations and C4I architectures in the future. See paragraph 3-3 for further discussion of the technical architecture.

(3) The infrastructure provided allows Army medical organizations/units to interface with the global information infrastructure (GII). The GII includes more than just the physical facilities used to store, process, and display voice, data, and imagery. It encompasses a wide array of ever-expanding capabilities, including cameras, scanners, keyboards, FAX machines, and more. It electronically links organizations and individuals around the globe and is characterized by a merging of civilian and military information networks and technologies. The infrastructure includes both military and nonmilitary AIS. See paragraph 3-3 for further discussion of the systems architecture.

*c. Military Automated Information Systems.* Military AIS integrate fielded and developmental battlefield automation systems and communications to functionally link strategic, operational, and tactical headquarters. Information systems maximize available information networks through seamless connectivity as well as C4I interoperability.

*d. Nonmilitary Automated Information Systems.* The nonmilitary AIS that the Army relies on include—

- Postal and telegraph systems within CONUS and those of host nations.
- Commercial communications satellites systems such as intelligence satellites and the International Maritime Satellite.
- Electric-powered systems that support information networks.
- Commercially developed software applications.
- Public-accessed databases and bulletin boards.
- Digital cameras and video-teleconferencing.
- Public access telephone and data communication networks (Internet).

(1) These nonmilitary AIS offer the commander alternative means to satisfy informational C2 needs, but only after carefully assessing each for security risks.

(2) Forward deployed medical organizations will be challenged to employ flexible interfacing systems and effective training strategies. Training strategies must address sustainment and new equipment training. Maintaining skill levels of the users of IO equipment and software programs is essential for conducting effective CHS IO. The IO systems must have embedded tutorials and access to distance learning programs for maintaining user skills. If commercial off-the-shelf (COTS) hardware and software is purchased, training support packages must be included in the purchase (manuals, tutorials, and help desk and website addresses). Additionally, information on other sources of training programs and training materials is available to the users.

*e. Information Technology.* It must be remembered that information technology is only an enabling tool. In and of itself, technology is not a panacea that will solve all the problems and challenges of

a modern battlefield, or of national and international emergencies. Only quality-trained soldiers and leaders will allow the Army medical units to function efficiently amidst the chaos that is created on the modern battlefield.

### 3-3. Architecture

Architecture, as defined by the DOD C4I Joint technical architecture, is explained in terms of a technical architecture, an operational architecture, and a systems architecture (Figure 3-1). These architecture definitions are also supported by the DOD technical architecture framework for information management. In order the medical units to be successful in the Information Age, they must be able to conduct IO on a continuous basis in support of joint, combined, or coalition operations. Across the spectrum of national and international relations, from stability operations and support operations to war, the ability to link with national and international agencies is a key factor in conducting successful operations. Prior to conflict or crisis, it is imperative that routine cooperation and coordination among all agencies associated with the AMEDD be established.

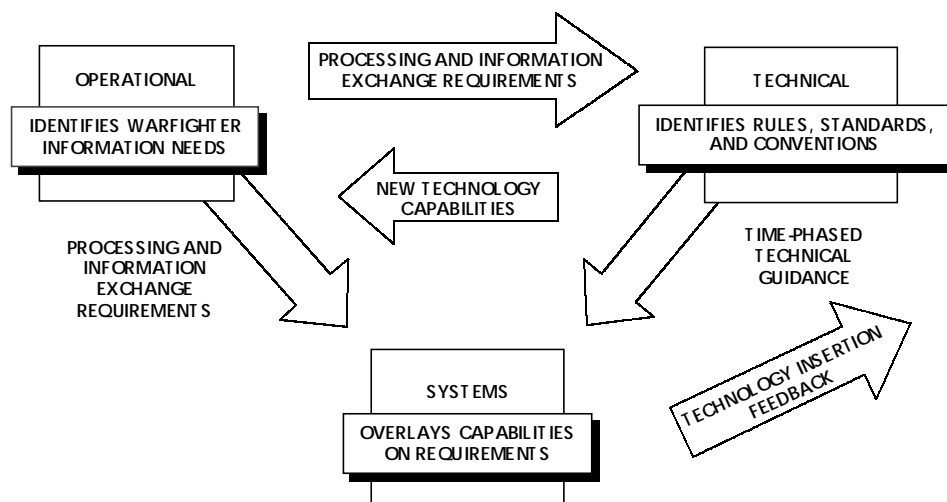


Figure 3-1. Operational, technical, and systems architecture.

a. *Operational architecture* (equivalent to functional architecture) identifies user information needs. It establishes the required connectivity among processes, functions, information, and organizations. It will show what the Army does, what information the Army needs to do its mission, and how often the Army needs to exchange information within the force. The AMEDDC&S brings together the CHS doctrine, requirements, and operations of the medical organizations into the operational architecture. Operational architecture is especially mission and location dependent.

*b. Technical architecture* establishes a set of rules governing the arrangement, interaction, and interdependence of all the parts and elements that, together, constitute the Army's AIS. It specifies the permissible standards for designing C4I capabilities and is critical to the creation and maintenance of interactive systems. The MEDCOM Information Management Directorate is accountable for and will publish the technical architecture. The AMEDD technical architecture complies with the Defense Information Infrastructure (DII) and the common operating environment, MHS, and the DISA technical architecture framework for information management.

*c. System architecture* is the responsibility of the MRMC. The MRMC identifies the relationships among C4I components of systems and creates physical connectivity within the AIS. It uses an organizational context to show system allocation and network structures and helps document engineering decisions, such as specific information protocols and bandwidth. See Appendix A for an inventory of information resources relevant to medical IO.

### **3-4. Planning for Combat Health Support Information Operations**

For effective CHS IO planning, medical planners must:

- Have an understanding of the WIN and its subsystems being used to support the operations.
- Know the bandwidths available to medical units.
- Identify satellite use and funding requirements for deployed medical units.
- Know the echelons of care and other CHS capabilities.
- Identify and plan for consultation support from the sustaining base.

The CHS IO plan should provide information on how connectivity is achieved with the medical organizations located in the sustaining base. Army medical commanders and leaders must establish criteria for measuring the effectiveness of CHS IO in their organizations. Does the unit have procedures in place for conducting CHS IO, does the unit have the proper equipment, and how well is information being managed? Are the commanders' critical information requirements being met. Army medical units must establish minimum acceptable standards for the performance of CHS IO. Army Regulation 380-19 prescribes information management/IO/information technology standards for the Army. Currently under development is the Medical Analysis Tool (MAT) which will assist the medical planner in development of the CHS plan. The MAT is a decision support tool intended for use by medical planners in a secure environment for military operations planning, program budget preparation. The MAT will provide medical planners with analytical assistance and decision support for the steps in the medical planning process. The MAT allows the medical planner to describe a scenario graphically, illustrating units supported, according to time-phased arrivals in the theater of operations and geographic positioning on a map. The MAT includes a Requirements Generator (RG) module and a Course of Action Analysis (COAA) module. The RG calculates medical requirements. The COAA enables comparison of scenarios to assess their medical supportability and sustainability requirements. The MAT will provide a text file report that will enable medical planners the

ability to compare and evaluate scenarios efficiently. In the past, two separate tools performed these functions. The MAT integrates these two capabilities into one tool. Using the MAT, medical planners can determine the level and scope of medical support required for an operation. They can also develop and evaluate different courses of action for probable scenarios. The MAT will be fielded to the Joint Staff, OSD, the Services, Commanders in Chief (CINC), and their components.